CHEM 1310 Lecture Syllabus

Prin of Gen Chem for Engr, Section G, and 4 credits hour

Fall 2026

Instructor Information

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General Course Information

Description

This course is a survey of general chemistry that covers a wide array of topics with focus on applications in everyday life. Specific topics include atomic structure, bonding theory, stoichiometry, properties of solids, liquids and gases, chemical thermodynamics, chemical equilibrium, electrochemistry, and kinetics.

Pre- &/or Co-Requisites

There are no pre-requisites for this course. Some familiarity with subatomic particles, ions, chemical nomenclature, and basic stoichiometry are helpful but not required.

Course Learning Outcomes

- *Identify* steps in the scientific method and apply them in a laboratory setting.
- *Apply* concepts of measurement and significant figures to laboratory practices and
- chemical problems.
- *Correlate* position on the periodic table to properties of elements and bonding.
- *Calculate* amounts of chemical species using information from chemical formulas and chemical equations.
- *Correlate* information from balanced chemical equations to the microscopic scale.
- *Explain* atomic structure using the quantum mechanical model of the atom.
- *Explain* periodic trends using theories of electronic structure.
- *Correlate* molecular structure to molecular properties and reactivity.
- *Interpret* thermochemical equations and data and evaluate energies of systems.
- *Summarize* the behaviors of gases and *explain* them using the kinetic-molecular theory.

- *Correlate* the molecular level process that occur during heating, cooling, and phase changes to the amount of energy removed or added to a system during each process.
- Interpret equilibrium data regarding gaseous and aqueous reactions.
- *Compare/contrast* the concepts of the three theories of acids and bases and apply them to inorganic and biological systems.
- *Integrate* the concepts of equilibrium, Gibbs free energy, and cell potential
- Use reaction mechanisms to *infer* the kinetics of a chemical reaction.
- *Compare/contrast* the relationships between rate and concentration, concentration and time, and rate and time. *Apply* these principles to kinetic data.

Required Course Materials

Course Text: Interactive General Chemistry, Macmillan Learning

- This is an interactive e-book that includes access to Achieve, the online homework platform. Purchase access to the textbook and Achieve using the Macmillan Learning link on the lecture Canvas site.

Additional Materials/Resources

- Laboratory notebook (any full-size notebook is fine)
- *Microsoft Office suite.* You will need access to Word, Excel, and PowerPoint for this course. All can be downloaded free of charge for GT students through OIT.
- Access to Canvas, are required. If you experience connectivity issues, then please contact Dr. Le for assistance.

Course Website and Other Classroom Management Tools

Canvas

There are Canvas sites for both lecture and lab. All lecture materials, information, and grades are on the lecture site while all laboratory materials, information and grades are on the lab site. Be sure to select a deliver method for course announcements. ***You are responsible for all information posted in Canvas announcements.***

Ed Discussion

This term we will be using Ed Discussion for class discussion. The system is highly catered to getting you help quickly and efficiently from classmates and teaching assistants. We encourage you to post your questions on Ed Discussion. Please keep in mind general guidelines for civility as you post questions and responses. We intend the site to help build community within the class, and we are determined for it be a safe and inclusive space for all students in the course.

General Ed discussion etiquette:

- If the question is from an assignment, then please summarize or copy it into the Ed Discussion question rather than just referencing the problem number. This makes it much easier for people to quickly respond rather than having to dig up the question.
- Provide some insight into what you've done to try to solve the problem or answer the question so that more targeted assistance can be provided.
- Read through recent posts before contributing your question to see if it already has been addressed.
- Contribute with answers when you can.

AchieveLearning
Post-lecture homework problems. This site can be accessed directly via Canvas.

Grading Policy:

Exam 1	10% or 100 points
Exam 2	10% or 100 points
Exam 3	10% or 100 points
Practice Exams (1% each – 3 total)	3% or 30 points
Final Exam	22% or 220 points
Daily work[1]	25% or 250 points
Laboratory[2]	20% or 200 points
Total	100% or 1000 points

1. Daily work consists of online homework, group problem-solving in class, and mini-review quizzes assignments on Canvas. See below for additional details.
2. Students earning below 60% in the laboratory component OR below 60% in the lecture component of the course (exams 1-3, final exam, and daily work) of the course will receive an F for the semester and will be required to repeat both the lecture and the laboratory component, regardless of their final total points. Note that there is a separate laboratory syllabus.

Description of Graded Components

Exams

Three exams will be given during the semester on the dates listed below during normal class time.

Exam 1 TBD

Exam 2 TBD

Exam 3 TBD

Exams will be administered ***on Canvas via the Quizzes feature*** and consist of some combination of multiple choice, numeric entry, fill in the blank or fill in multiple blanks, and matching questions. I do *not* provide explicit study guides or topic lists, so you should make notes in class and as you study about topics you feel are most important.

They will be uploaded to Canvas by 7:30am on the exam date listed in the syllabus. Students are expected to bring their own laptops to the classroom. It's students' responsibilities to ensure that your laptop is charged, that your battery is good and your computer is ready for the first exam period.

Final Exam

A two hour and fifty-minute, final exam will be given at the time and place determined for this course by standard Georgia Tech procedures. Final will be administered ***on Canvas via the Quizzes feature*** and consist of some combination of multiple choice, numeric entry, fill in the blank or fill in multiple blanks, and matching questions similar to the midterm exams. The final exam is scheduled for **TBD** The complete schedule of final exams may be found at this site: https://registrar.gatech.edu/current-students/exams

You are not permitted to use your phone and/or your tablet devices to take the exams. The use of headphones (both in-ear and on-ear) is not allowed. You are not permitted to use internet searches for exams, nor are you permitted to collaborate with any other person on exam questions. This includes (but is not limited to) the discussion of general question topics. You are not permitted to submit exam questions to services such as Chegg or Course Hero. You are not permitted to use internet for any purpose other than accessing the exam in Canvas during the testing period. You may not have any applications open other than Canvas. You may not have any internet browser tabs open other than the Canvas quiz and associated periodic table. If you are observed with any applications or tabs open, then it will be considered an academic integrity violation and reported to the Office of Student Integrity.

Please plan your schedule accordingly for the three mid-term exams and final exam. Early final exams will NOT be given to accommodate travel schedules. Any requests to change the time or date of the final exam will be accommodated only in instances in which a student has three final exams on the same day with the CHEM 1310 final **exam being the middle exam (per Institute guidelines).**

Crib Sheets

One 8.5 x 11 crib sheet will be permitted for use on each of three of intermediate exams. Only one side of the crib sheet may be used, and they must be handwritten. No photocopies, typed,

scanned or electrically copied information is permitted. You **cannot** type on your tablet and print it out. ***Your name and GTID should be written on the back of each crib sheet.***

Four crib sheets may be used for the final exam as described above. ***All of your crib sheets will be collected with your final exam and must have your name and GTID on the back of each page. You may not use photocopies of your crib sheets. You may not take pictures of your crib sheets after you have completed the final exam.***

Grade Improvement Plan

The final exam will be composed of four sections with the first three sections representing material from exams 1 and 2, respectively. The remaining section will cover material after exam 2. If you earn a higher score on a given section than you did on the corresponding exam, that percentage will replace the original score. For example, if a student earns a 75% on exam 1 and a 95% on section 1 of the final exam, the 95% will be used in the grade calculation. It is possible for all three original exam scores to be replaced with the Grade Improvement Plan. ***You must have attempted the original individual exam or have an excused absence communicated to the course instructors to be eligible for the Grade Improvement Plan.***

Daily Work

Daily work consists of work that is designed to be completed regularly (daily) to help you stay on track with course material. These assignments are designed to aid your understanding of material and should be viewed as part of your study and learning process rather than tasks simply to be completed.

To emphasize this philosophy, we offer you many more points of opportunity than are required for full credit. As outlined below, there are 298 points available; of these, you need 250 for full credit. This means that individual due date extensions and make-up assignments will be available only for those with excused absences, institute approved absences, or disabilities accommodations. Each of these circumstances should be discussed with Dr. Le as soon as you know of an issue.

Though you need only 250 points, we encourage you to engage in as many of the assignments as possible to facilitate your success in the course.

Assignment Type	Number of Assignments	Points per Assignments	Total Points Available from Assignment Type
Achieve Learning (online homework)	19	Variable	169

In-Class Assignments	37	3	108
Learning Reflections	3	5	15
TOTAL POINTS POSSIBLE			**292**

- *Achieve Learning:* There are 19 assignments with a variable number of questions each of which is worth 1 point or ½ point. Please see Homework schedule for a specific due date.
- *In-Class Assignments:* Problem solving will be a focus of a portion of each class period. Work will be submitted via Canvas quizzes and will be due at 11:59 pm on the day after of each lecture.
- *Learning Reflections:* Periodically throughout the semester and after each exam, a learning reflection assignment will be posted on Canvas. These assignments will be graded for completion and are designed to help you consider your approach to learning in the course and how it facilitates your goals associated with CHEM 1310.

Laboratory

You **must** pass Laboratory to pass the **overall course**. Teaching assistants will have the responsibility for establishing laboratory grades. Students are graded on pre-lab quizzes, formal lab reports, summary reports, report accuracy, lab technique and safety and two laboratory quizzes/practicums. **A grade of 60% or better in the lab is considered passing.** If you fail CHEM 1310 lab, you must retake the entire lecture and lab. Your teaching assistant may specify that students work in pairs or in larger groups for certain experiments. Whether this is the case or not, *all reports must be prepared independently by each student*. Please see the lab syllabus for more details.

Grading Scale

Your final grade will be assigned as a letter grade according to the following scale:

A	90.0 – 100%	900—1000 points
B	80.0 – 89.9%	800—900 points
C	70.0 – 79.9%	700—800 points
D	60.0 – 69.9%	600—700 points
F	Less than 60.0%	less than 600 points

OR Less than a 60% in laboratory or less than 60% of lecture components (less than 480 points of 800 points)

Course Policies

USG Required Course Policies [remove this heading in your final syllabus]

Attendance and/or Participation

The only component of CHEM 1310 with required attendance is laboratories. Attendance in lecture is *strongly* encouraged.

Academic Integrity

Georgia Tech aims to cultivate a community based on trust, academic integrity, and honor. Students are expected to act according to the highest ethical standards. Review Georgia Tech's Honor Code and the student Code of Conduct.

Any student suspected of cheating or plagiarism on a quiz, exam, or assignment will be reported to the Office of Student Integrity, who will investigate the incident and identify the appropriate penalty for violations.

Core IMPACTS

Core IMPACTS is the University System of Georgia's General Education curriculum. If you are teaching a course that counts towards Core IMPACTS, you should include a syllabus statement about the Core area and associated career competencies. This resource developed by the Center for Excellence in Teaching and Learning and Online Education at Georgia State University includes template syllabus statements for each of the Core IMPACTS areas that you may adapt for your course.

Additional Georgia Tech Required Policies [Remove this heading in your final syllabus]

Accommodations for Students with Disabilities

If you are a student with learning needs that require special accommodation, contact the Office of Disability Services (404-894-2563) as soon as possible to make an appointment to discuss your special needs and to obtain an accommodations letter. Please also e-mail me as soon as possible in order to set up a time to discuss your learning needs.

Student-Faculty Expectations Agreement

At Georgia Tech, we believe that it is important to strive for an atmosphere of mutual respect, acknowledgement, and responsibility between faculty members and the student

body. The Student-Faculty Expectations articulate some basic expectations that you can have of me and that I have of you. In the end, simple respect for knowledge, hard work, and cordial interactions will help build the environment we seek. Therefore, I encourage you to remain committed to the ideals of Georgia Tech while in this class.

We expect students to arrive prepared for class, to participate in class activities and discussions, and to utilize office hours for additional help when needed.

In return, students should expect instructors to arrive prepared for class, to engage them in activities and discussions that further their understanding of course material, and to be available during office hours.

Students should expect to spend 6-9 hours per week outside of the classroom and laboratory to excel in this course. This includes time spent reading the textbook, watching videos as assigned, working problems, and writing laboratory reports. Students are encouraged to develop a pattern of preparing for class, attending class, and then reviewing after each class period.

Collaboration, Group Work, and Use of Generative AI

You are encouraged to work with classmates on in-class problem solving and to study with others outside of class. Collaboration on homework assignments is acceptable, and you should keep in mind that the effort you put into these assignments will be reflected in what you gain from them. Discussion of the material in laboratory assignments is appropriate; however, all work submitted in reports must be prepared independently.

Extensions, Late Assignments, & Re-Scheduled/Missed Exams

Comprehensive guidelines regarding class attendance and excused absences can be found in the Georgia Tech catalog. Please read through the policies in their entirety.

http://www.catalog.gatech.edu/rules/4/

http://www.catalog.gatech.edu/policies/student-absence-regulations/

Due to the structure of Daily Work, late homework submissions and in-class work are not accepted except in the case of excused absences. Lab assignments are penalized at 10% of the total assignment value for each day they are late following the precise due time. in

***Guideline summary: Application primarily to exams and laboratories in CHEM 1310*:**
You are permitted to miss an exam for Institute approved absences (athletics, etc.) You should inform Dr. Le via email as soon as you have your travel schedule so that we can make arrangements for you to take the exam at an alternate time.

If you miss an exam due to illness, then you should submit medical documentation to the Office of the Dean of Students. They will contact the course instructors, and we will work with you to determine the best course of action. Please also email Dr. Le as soon as you know you will miss or have missed an exam due to illness. You do not need to provide details regarding the illness.

Students may miss exams due to personal emergencies. Again, documentation of some sort should be provided to the Office of the Dean of Students who will communicate with course instructors. Please also email Dr. Le as soon as you know you will miss or have missed an exam due to personal emergency.

Students who are absent because of participation in a particular religious observance will be permitted to make up the work missed during their absence with no late penalty, provided the student informs the course instructors of the upcoming absence, in writing, within the first two weeks of class, and provided that the student makes up the missed material within the time frame established by the course instructors. This also applies to exams.

You must contact Dr. Le immediately if you miss an exam without an excused absence (as outlined above).

Student Use of Mobile Devices in the Classroom

Exams will be administered ***on Canvas via the Quizzes feature***, having a laptop during these exam times is required. You are not permitted to use your phone and/or your tablet devices to take the exams. The use of headphones (both in-ear and on-ear) is not allowed. You are not permitted to use internet searches for exams, nor are you permitted to collaborate with any other person on exam questions. This includes (but is not limited to) the discussion of general question topics. You are not permitted to submit exam questions to services such as Chegg or Course Hero. You are not permitted to use internet for any purpose other than accessing the exam in Canvas during the testing period. You may not have any applications open other than Canvas. You may not have any internet browser tabs open other than the Canvas quiz and associated periodic table. If you are observed with any applications or tabs open, then it will be considered an academic integrity violation and reported to the Office of Student Integrity.

Campus Resources for Students

Undergraduate Student Academic Success Resources:

- Academic Support: Academic Success and Advising (a unit in the Office of Undergraduate Education & Student Success) provides free support for your courses. Students can attend scheduled supplemental review (PLUS) sessions, stop by Drop-In Tutoring, or schedule a one-on-one appointment through Knack. To explore what options work best for you, please visit us online at success.gatech.edu/tutoring, email us at tutoring@gatech.edu, or come see us at Clough Undergraduate Learning Commons, Suite 283.

Graduate Student Academic and Professional Success Resources:

A list of resources for graduate students is given on the Office of Graduate and Postdoctoral Education website. Specific information for current graduate students includes

- Academic Resources such as the Communications Center, Language Institute, Library, Catalog, Registrar, resources for conducting research, Advocacy and Conflict Resolution resources, and how to manage unexpected situations that may impact your academic performance;

- Student Resources such as Campus Services, Child Care/Family programs, Health & Wellness, Career Services, and the Student Resource Guide; and
- *Professional Development such as the programming from the Career Center and other professional development resources and events"*

Student Well-Being:

At Georgia Tech, we are concerned about your overall physical, social, and mental well-being. A comprehensive list of wellness related resources has been compiled and maintained by the Office of the Vice President for Student Engagement and Well-being (student-resource-guide (gatech.edu)